

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION CONCERNING
TRANSMITTAL OF COPY OF INTERNATIONAL
PRELIMINARY REPORT ON PATENTABILITY
(CHAPTER I OF THE PATENT COOPERATION
TREATY)
(PCT Rule 44bis.1(c))

To:

MYERS BIGEL SIBLEY & SAJOVEC, P.A.
P.O. Box 37428
Raleigh, North Carolina 27627
ETATS-UNIS D'AMERIQUE

Date of mailing (*day/month/year*)
18 October 2007 (18.10.2007)

Applicant's or agent's file reference
5470.398.WO

IMPORTANT NOTICE

International application No.
PCT/US2004/030987

International filing date (*day/month/year*)
21 September 2004 (21.09.2004)

Priority date (*day/month/year*)
22 September 2003 (22.09.2003)

Applicant

UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL et al

The International Bureau transmits herewith a copy of the international preliminary report on patentability (Chapter I of the Patent Cooperation Treaty)

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By SD
Date 10/25

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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 5470.398.WO	FOR FURTHER ACTION		See item 4 below
International application No. PCT/US2004/030987	International filing date (<i>day/month/year</i>) 21 September 2004 (21.09.2004)	Priority date (<i>day/month/year</i>) 22 September 2003 (22.09.2003)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL			

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input checked="" type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	Date of issuance of this report 09 October 2007 (09.10.2007)
	Authorized officer Beate Giffo-Schmitt e-mail: pt03.pct@wipo.int

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
KAREN A. MAGRI
MYERS BIGEL SIBLEY & SAJOVEC, P.A.
P.O. BOX 37428
RALEIGH, NC 27627

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference 5470.398.WO		Date of mailing (day/month/year) 25 SEP 2007
FOR FURTHER ACTION See paragraph 2 below		
International application No. PCT/US04/30987	International filing date (day/month/year) 21 September 2004 (21.09.2004)	Priority date (day/month/year) 22 September 2003 (22.09.2003)
International Patent Classification (IPC) or both national classification and IPC IPC: C12Q 1/56(2006.01) USPC: 435/13		
Applicant UNIV. OF NORTH CAROLINA AT CHAPEL HILL		

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Date of completion of this opinion 04 August 2007 (04.08.2007)	Authorized officer Satyendra K. Singh Telephone No. 571-272-8790
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Form PCT/ISA/237 (cover sheet) (April 2005)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US04/30987

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - ☒ the international application in the language in which it was filed
 - ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material
 - ☐ on paper
 - ☐ in electronic form
 - c. time of filing/furnishing
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in electronic form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US04/30987

Box No. II Priority

1. ☐ The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43*bis*.1 and 64.1) is the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:
This international search authority acknowledges applicant's claim for priority over US provisional application US 60504796 filed on 22 September 2003.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US04/30987

Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims <u>3-49</u>	YES
	Claims <u>1-2</u>	NO
Inventive step (IS)	Claims <u>NONE</u>	YES
	Claims <u>1-49</u>	NO
Industrial applicability (IA)	Claims <u>1-49</u>	YES
	Claims <u>NONE</u>	NO

2. Citations and explanations:

Claims 1 and 2 lack novelty under PCT Article 33(2) as being anticipated by Triplett et al (US 5,705,198). Triplett et al disclose a method of evaluating clotting activity comprising: combining a plasma sample (from patients containing lupus anticoagulant, LA; see Triplett et al, abstract, summary of the invention, examples 4 and 5, in particular), a soluble phospholipid (see Triplett et al, column 5, 4th paragraph, in particular), a contact activator and calcium chloride (see Chromogenic Test for thrombin activity, example 5, in particular), incubating said mixture for a time and under conditions sufficient for thrombin activation, and detecting thrombin activity (by the release of p-nitroaniline that is measured photometrically) which is indicative of clotting factor activity in the sample.

Claims 1-49 lack an inventive step under PCT Article 33(3) as being obvious over the following prior art cited by the Examiner: Triplett et al (US 5,705,198); Speck (US 3,486,981); Matschiner (US 5,525,478); Kraus (US 2002/0019021 A1); Rosen et al (US 6,395,501 B1); Dai et al (US 2003/0073071 A1); and Wang et al (US 6,596,543 B2).

Claims are generally directed to various methods (including a composition, and a kit) of evaluating clotting activity, or clotting time based on thrombin or clotting factor activity in blood or plasma samples. The prior art relied upon by the Examiner discloses a generic method (as discussed above, Triplett et al) for evaluating the clotting activity of blood or plasma from patient sample. In addition, various components used in the method, such as contact activator (see Speck, columns 3-4; uses ellagic acid; Rosen et al, see claims 26-27, in particular), activated protein C or APC and protein S depleted plasma, various phospholipids, tissue factor and other clotting factors, various standards and controls, and kits comprising said reagents for performing said clotting assay (see Matschiner, abstract, figures 1-4, examples; Kraus, abstract, pages 3-4, page 5 [0051]; Rosen et al, abstract, columns 7-9 and 10-12, examples and claims; Dai et al, abstract, example 5 and claims; and Wang et al, abstract, column 2-3, in particular) have been fully disclosed in the cited prior art. Therefore, it would have been obvious to a person of ordinary skill in the art to modify the methods of Triplett et al or Speck using/substituting the components already known in the art to arrive at the invention (methods as well as a composition and a kit) as claimed with a reasonable expectation of success. Thus, the entire invention as claimed lacks an inventive step.

Claims 1-49 meet the criteria set out in PCT Article 33(4), and thus claims 1-49 have industrial applicability because the subject matter claimed can be made or used in industry.